# Contents

Section 13

# Southeast Colorado River Basin

**Utah State Water Plan**

## Disaster and Emergency Response

### 13.1 INTRODUCTION

This section of the Southeast Colorado River Basin Plan discusses naturally occurring disasters and emergency response programs along with measures to reduce personal injury and loss of property. Information and data are provided on past disasters along with organizations where assistance can be obtained.

### 13.2 BACKGROUND

The Southeast Colorado River Basin consists of a number of small drainages that discharge to the Green, Dolores and San Juan rivers and ultimately to the Colorado River. Those drainages with perennial streams often have communities located in close proximity. Many of the remaining drainages are dry washes in isolated or sparsely populated areas with only minimal opportunity for major flood-related damage. In all of the tributaries, high intensity cloudbursts will produce flash floods. If this happens in an area where there is development, there will be damage and possible loss of life.

Droughty cropland

The National Flood Insurance Program (NFIP) was established by Congress in 1968 to relieve taxpayers of large financial subsidies when flooding destroyed property, disrupted daily activities and threatened lives. This program is administered by the Federal Emergency Management Agency (FEMA) and requires flood insurance on all development within the 100-year flood plain if assistance is requested. Lack of insurance denies use of any federal or federally insured funds for development in flood plains. To date, there has been limited mapping of flood plains and there is little involvement in the NFIP.

> Often with no warning, disasters damage the resources, destroy cultural developments and take human lives. This can be mitigated with proper preparedness planning and action.

The basin is regularly subjected to varying degrees of drought. During the time-periods of 1886-1896, 1932-1937, and 1950-56, precipitation was extremely low. There were other years when precipitation was below normal and water supplies were below average such as 1977 and 1995-6. The lowest annual precipitation records for three stations were Blanding, 4.93 inches, 1956; Moab, 4.79 inches, 1954; and Monticello, 6.56 inches, 1950. Monticello has the highest average annual precipitation with 15.5 inches.

Blanding reports about 13 inches of annual precipitation and Moab has 9 inches. Precipitation in the upper watersheds of the La Sal Mountains is over 30 inches and in the Abajo Mountains reaches 25 inches. With only this amount of precipitation on relatively small areas, the groundwater storage in the upper watersheds is inadequate to sustain flows in the lower reaches of the streams. This also impacts the flow of springs in the lower elevations. As a result, lower than normal precipitation will soon result in a drought situation.

Other types of disasters or emergencies are not as prevalent. There are no major active faults and there is not a high volume of hazardous materials shipped through the area.

## 13.3 ORGANIZATIONS AND REGULATIONS

Natural disasters can cause extreme damage as well as impact lives. To effectively prepare for the most common types of disasters and manage the eventual cleanup and rebuilding process, a complex organization must be in place consisting of local, state and federal agencies and organizations. This organization begins at the local level.

In the event of a disaster, assistance is first provided by local agencies. This response is directed by the assigned Local Disaster Coordinating Officer (LDCO) who is responsible for coordinating all efforts by local fire departments, police, emergency medical staff and utility agencies. The LDCO will establish a local operations center from which to direct all emergency and first response efforts and to report the status of all assistance and relief efforts to state and federal authorities. The position responsible for disaster response in each county is shown in Table 13-1.

To provide an effective "first response" to a natural disaster, local governments have been directed to:

- Prepare an operations plan for the coordination of responses with other agencies
- Provide the necessary resources to support natural disaster emergency relief operations.
- Assign and train the personnel required to perform natural disaster relief functions.
- Provide the State Disaster Coordinating Officer (SDCO) with copies of current emergency operations plans.

In the event property damage and personal injury exceed the management and response capability of local agencies, the governor, at his discretion, can declare a "State of Emergency" and provide state assistance and request federal assistance. Once a "State of Emergency" is declared, the Governor's State Disaster Coordinating Officer (SDCO) assumes all responsibility. The SDCO will work with, and generally manage, the activities of local disaster coordinators so assistance and aid are properly distributed to disaster victims in an efficient and timely manner. The SDCO also serves as the governor's primary point of contact between the

Table 13-1
DISASTER RESPONSE RESPONSIBILITY

| County | Responsible Position |
|---|---|
| Grand | Director, c/o Grand County Sheriff's Office |
| San Juan | Director, San Juan Co. Emergency Services |
| Navajo Nation | Department of Emergency Management |

Federal Coordinating Officer and state and local government disaster management officials.

The Division of Comprehensive Emergency Management (CEM) is the responsible agency at the state level for disaster related programs and for providing assistance. They assist towns, cities and counties to prepare emergency response and management plans. CEM also works closely with other state and federal agencies to assure needed manpower, equipment, materials and funding reach areas seriously impacted by a major disaster.

State and federal support agencies include the heads and staff of all state departments and divisions, the Governor's Office and FEMA. As part of the state's overall disaster response plan, selected state agencies should develop individual plans compatible and consistent with their full-time assigned responsibilities. The plan should outline specific procedures offering assistance and aid to reconstruct or reestablish damaged facilities.

When a state of emergency is declared by the governor, additional assistance can be requested at the federal level. At this point, the President can declare a "Federal Emergency" or "Major Disaster." This makes the impacted state eligible for federal emergency assistance through FEMA programs under Public Law (PL) 93-288.

A "federal emergency" is limited to funding required to save lives, protect property, restore essential public services that threaten public health or reduce the threat of personal injury and further loss of property. A "Major Disaster" provides funding to restore both public and private damaged property and to change existing conditions, either man made or natural, that would contribute to future disasters of the type and magnitude previously experienced.

Aid and assistance from federal disaster programs must be distributed under the direction of the Federal Coordinating Officer in direct cooperation with both the FEMA and the SDCO. At the local level, this assistance will be the responsibility of state and federal personnel assigned to the disaster field offices.

## 13.4 DISASTER PROBLEMS

As previously indicated, the Southeast Colorado River Basin will more likely be subjected to two kinds of disasters; floods and droughts.

### 13.4.1 Flooding Problems

The threat of a major flash flood is real and occurs on a regular basis. With the exception of Moab, the areas subject to flash flooding are sparsely populated and major property damage and personal injury are minimal or nonexistent.

Three climatological reporting stations recorded over three inches of precipitation in one day. These precipitation amounts could be the result of a short-duration cloudburst which can produce flash flooding. These record precipitations are: Moab, 3.99 inches; Cedar Point, 3.75 inches; and Monticello, 3.38 inches. It is also possible to have flash floods produced with less precipitation if it occurs in a short time-period.

Flood plain studies have been conducted on some drainages. The Corps of Engineers (COE) has completed studies on miscellaneous tributaries of the Colorado River above Lees Ferry, the San Juan River, and a number of small studies within the Navajo Nation to address the potential for flooding and related property damage. These studies determined that major flood control projects are not economically feasible.

Flooding in Mill Creek (Courtesy City of Moab)

Grand County was mapped by FEMA in 1983 for existing flood hazards. The county has chosen not to participate in the NFIP. As a result, all individual residences and commercial and industrial businesses in unincorporated communities and areas of the county do not qualify for NFIP. In addition, emergency funding may also be limited in the event of a presidentially declared flood disaster.

The COE has made the most comprehensive effort to quantify and map flooding events in the more populated areas. A study completed in 1994 identified the 100-year flood plain for both Mill and Pack creeks near the town of Moab and determined that the 100-year flood event was 10,500 cfs and 7,800 cfs, respectively. Although the 100-year flood for Mill Creek is expected to approach the wastewater treatment facility and hospital, the impact is projected to be minimal.

Moab is the only community in Grand County participating in the NFIP. There are about 56 flood insurance policies with a total coverage of over $3.8 million. Figure 13-1 shows the 100-year flood plain for the City of Moab.

San Juan County started participating in the NFIP in 1985. There are no listed active flood insurance policies. However, some individual residences and smaller communities within rural San Juan County are actively participating in the NFIP as an overall participating community. Monticello has identified special flood hazard areas but has elected not to participate in the NFIP. As a result, they would only receive limited funding in the event of a presidentially declared flood disaster. A flood plain map for Monticello was prepared in 1976. This is shown on Figure 13-2.

### 13.4.2 Drought Problems

The Southeast Colorado River Basin experiences periodic drought conditions at frequent intervals. These result in large losses of cultivated crops and rangeland vegetation.

The water supply for Spanish Valley is more consistent than other tributary streams in the basin. There were only three years during the 1950-93 period of record where the flow was less than 50 percent of the long-term average and only six additional years where it was less than 75 percent of average. The impact of drought has been more moderate here than in the rest of the basin.

The water supply in the Monticello/Blanding area is much more erratic. There were 14 years during the 1966-98 period of record where the stream flow was less than 50 percent of the long-term average and only 2 years where it was between 50 and 75 percent of average.

Alkali playa - sign of drought

Due to a severe drought extending from the fall of 1995 into the summer of 1996, the U.S. Department of Agriculture declared Grand and San Juan counties primary disaster areas in June of 1996. At the same time, the Governor of Utah declared these counties official disaster areas. This made the farmers and ranchers eligible for federal disaster relief assistance.

### 13.4.3 Other Disaster Problems

Other disaster or emergency situations include earthquakes, hazardous waste spills and wildfire. The Colorado Plateau is essentially devoid of any major earthquake activity. There has never been an earthquake larger than magnitude 4.0 on the Richter scale recorded in this area. The danger from hazardous spills is low. The only major transportation routes are I-70 and the Denver and Rio Grand Railroad, both in the

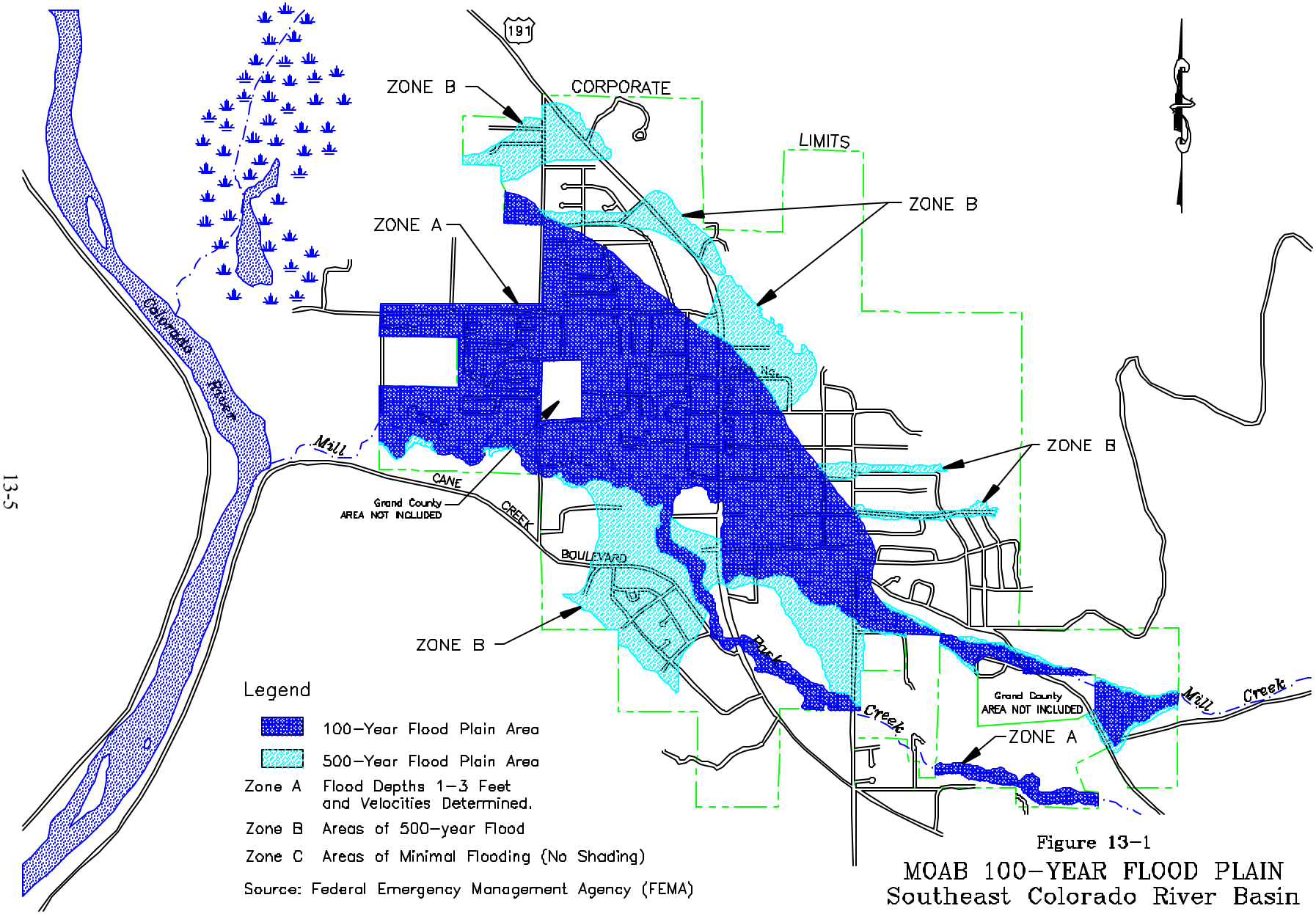


Figure 13-1

MOAB 100-YEAR FLOOD PLAIN
Southeast Colorado River Basin

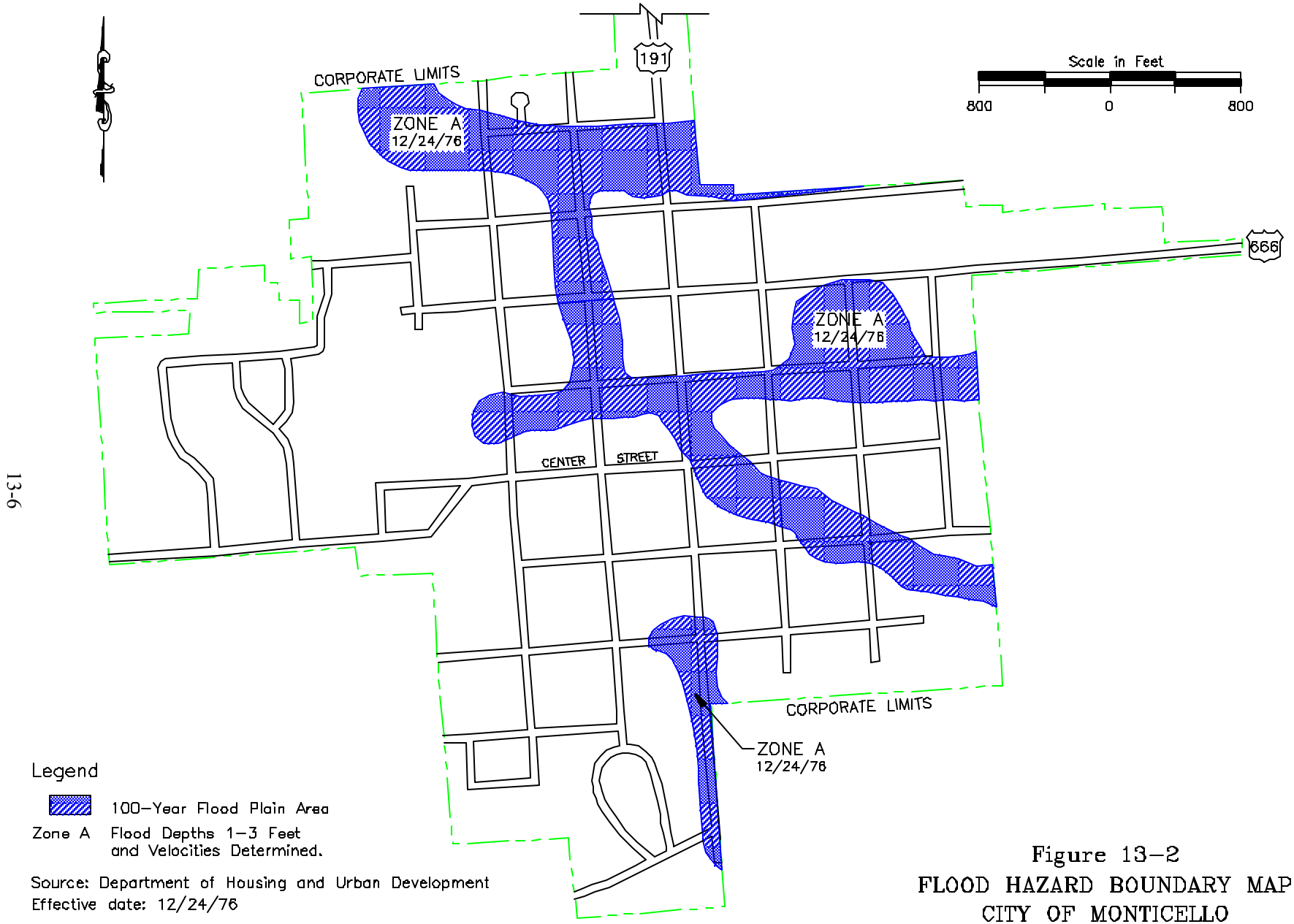


Figure 13-2
FLOOD HAZARD BOUNDARY MAP
CITY OF MONTICELLO
Southeast Colorado River Basin

northern part of the basin and U.S. Highway 191, running north and south. It is unlikely there will be spills along these routes.

The pinyon and juniper tree population in the lower washes of the basin have increased, primarily due to the loss of ground cover beginning in the 1880s. One area of concern is west of Monticello and Blanding in Comb Wash Canyon. The density of juniper trees has resulted in a fuel build-up with potential for wildfire.

The Bureau of Land Management (BLM) Moab District Fire Management Plan identifies an estimated 180,000 acres of local forest land, primarily in Comb Wash Canyon, as having a high risk for wildfire. Local land management agencies, including the Bureau of Land Management, are studying feasible options to reduce the wildfire potential. Possible solutions include changes in livestock grazing management, woodland management and recreation use patterns. More specific recommendations are presented in the BLM Watershed Management Plan.[55]

## 13.5 MITIGATION ALTERNATIVES

In order to respond to natural disasters and emergencies, local governments need to prepare Emergency Operation (Disaster Response) Plans and response teams must be prepared to act. This requires maintaining contact with local, state and federal agencies as needed. They should assess and update effective communications, medical facilities, survival equipment and education programs. Also, Emergency Action Plans need to be in place for all privately-owned water storage dams.

The Water Management Branch, Navajo Nation is working closely with the Corps of Engineers to delineate flood-hazard prone areas and 100-year flood plain management strategies. This effort was authorized in the Water Resources Development Act of 1999. Portions of the San Juan River flood plain were delineated by Morrison-Mairle Inc. in the late 1980s.

The Navajo Nation has received funding from the Bureau of Reclamation to develop a "Drought Response Plan" during fiscal year 2000. The appropriate drought response will be based on the Standard Precipitation Index.

## 13.6 ISSUES AND RECOMMENDATIONS

There is one issue. This discusses the need for flood plain management.

### 13.6.1 Flood Plain Management

Issue - Most local governments do not have flood plain management plans.

Discussion - Many communities are located along or near the mouths of streams. These drainages can produce devastating floods causing property damage and endangering the health and welfare of the residents. Most of these floods are caused by high-intensity cloudburst storms which produce high flows for a short period of time.

The purpose of the National Flood Insurance Program is to: 1) Reduce flood loss, 2) prevent unwise development in flood plains, and 3) provide affordable flood insurance to the public. The requirements to qualify for benefits are discussed earlier in this section. The Division of Comprehensive Emergency Management coordinates this program. They can assist local communities in the implementation of the flood plain objectives.

Recommendation - Non-participating entities should become qualified to participate in the National Flood Insurance Program. The Division of Comprehensive Emergency Management should assist. ❑